Customer No.: 31561
Docket No.: 12468-US-PA
Application No.: 10/709,036

REMARKS

Present Status of the Application

The Office Action remains rejections on claims 1-7. Specifically, claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanchard (U.S. Patent 4,707,909) in view of Elliott et al. (U. S. Pub. 20020069966; hereinafter Elliott). Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paynter et al. (U.S. Patent 5,518,951; hereinafter Paynter) in view of Elliott. Claims 1-7 remain pending in the present application, and reconsideration of those claims is respectfully requested.

Discussion of Claim Rejections under 35 USC 103

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable Blanchard in view of Elliott. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paynter in view of Elliott. Applicants respectfully traverse the rejections for at least the reasons set forth below.

1. It should be noted that the present invention is to convert all the amorphous silicon into polysilicon by laser annealing ***but not for fabricating electronic element of resistor***. The claimed invention simultaneously adjusts the ***laser energy intensity*** for annealing the amorphous silicon thin film, according to the ***measured resistance of the annealed silicon***. *The present invention* ***is not adjusting the operation time of the laser.***

2. In re Blanchard, a resistor is to be fabricated. Although the resistance is monitor when the laser scans and locally heat the resistor 15 (Fig. 6; col. 3, lines 24-36). Blanchard is in different mechanism from the present invention. Blanchard does not specifically disclose that the

laser energy intensity is dynamically adjusted according to the sheet resistance of the amorphous silicon, which is to be converted into polysilicon.

Further as disclosed in Blanchard (col. 2, line 8 - col. 3, lines 42 and Fig. 6), after the polysilicon film 13 is finally patterned into the resistor 15, the contacts 18 and 19 are used to measuring the resistance of the resistor 15 while the laser provides heat on the polysilicon resistor 15 in adjusting the desired resistance by activating the doped dopants (drifting in or drifting out). The laser of Blanchard is not used to control the size of crystal grains in polysilicon, as did in the present invention. This is indeed in different mechanism from the present invention, which is to convert amorphous silicon into polysilicon.

Basically, Blanchard is not used for re-crystallizing the amorphous silicon for control the size of crystal grains into polysilicon.

3. In re Paynter, a resistor is also to be formed. As disclosed by Paynter at col. 3, lines 43-54; and col. 7, lines 43-53, the resistance is measured as a feedback signal. However, Paynter discloses that the energy power and operation time of laser are selected. This does not specifically disclose that the laser energy power of Paynter is changing in time according to the measured resistance, so as to control the size of crystal grains in polysilicon, as did in the present invention.

Further as disclosed in Paynter (col. 7, lines 25-41; Fig. 11), again, the dopants of boron are doped in the silicon layer 9. The laser is to activate the dopants (drifting in or drifting out). As a result, the bonds (self-alloy) with the aluminum/silicon mixture of the contacts is shown at 23. The areas of the polysilicon layer 9 not affected by the laser annealing process that traces the sensor gauges 21 remain and act as an insulator between adjacent gauges 21.

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